

REMARKS

The Examiner has objected to the drawings for failing to comply with 37 CFR 1.84(p)(5). The Examiner indicates that reference signs for charge trapping regions 21 and 22, which are mentioned in the description, are not shown in the drawings. However, charge trapping regions 21 and 22 are shown in the cross sectional view of Fig. 2A. Consequently, the drawings meet the requirements of 37 CFR 1.84(p)(5).

Claim 7 has been amended to clarify the order of the steps.

Claim 13 has been amended to depend from Claim 7.

Claim 21 has been amended to correct an antecedent basis problem.

Claims 7-8, 10, 12-13, 15 and 21 have been rejected under 35 U.S.C. 102(e) as being anticipated by Kim (U.S. Patent No. 6,765,259).

Claim 7 recites "forming an oxide-nitride-oxide (ONO) layer" and "patterning the ONO layer to create a first set of ONO structures that define locations for a plurality of diffusion bit lines".

Kim teaches an ONO layer 804, which is patterned by performing an etch through photoresist mask 1001. (Kim, Col. 7, lines 35-58.) This etch results in a plurality of rectangular ONO structures, wherein each of the ONO structures is located under a corresponding word line. (Kim, Fig. 4B.) However, the patterned ONO structures described by Kim do not "define locations for a plurality of diffusion bit lines" as recited by Claim 7. In contrast, Kim explicitly teaches that bit lines 341-348 of the memory transistor array 300 are formed by a metal-1 layer. (Kim, Col. 5, lines 11-17.) Kim further indicates

that metal bit lines are used to provide the advantage of low bit line resistance. (Id.) Kim therefore teaches away from the use of "diffusion bit lines".

Because Kim teaches away from the use of "diffusion bit lines", Kim necessarily fails to teach that the ONO layer 804 is patterned to "define locations for a plurality of diffusion bit lines" as recited by Claim 7. For this reason, Claim 7 is not anticipated by Kim.

In addition, Claim 7 further recites "patterning the first set of ONO structures, thereby creating a second set of ONO structures, wherein the second set of ONO structures are located entirely under the plurality of word lines". Claim 7 therefore requires two ONO patterning steps, including: (1) a first patterning step, wherein the ONO layer is patterned to create a first set of ONO structures, and (2) a second patterning step, wherein the first set of ONO structures are patterned to create a second set of ONO structures.

Kim teaches that ONO layer 804 is only patterned one time, by performing an etch through photoresist mask 1001. (Kim, Col. 7, lines 35-58.) Thus, Kim fails to teach patterning an ONO layer to create a first set of ONO structures, forming word lines over the first set of ONO structures, and then patterning the first set of ONO structures to create a second set of ONO structures as recited by Claim 7. For this additional reason, Claim 7 is not anticipated by Kim.

Claims 8, 10, 12-13, 15 and 21, which depend from Claim 7, are not anticipated by Kim for at least the same reasons as Claim 7.

In addition, Claims 10, 11 and 12 recite "implanting diffusion bit lines", "thermally growing bit line oxide

regions over the diffusion bit lines, and "the diffusion bit lines extend along a first axis", respectively. Because Kim fails to teach or suggest diffusion bit lines, Kim necessarily fails to anticipate these additional recited elements of Claims 10, 11 and 12.

Claims 9 and 11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Applicant's Admitted Prior Art (AAPA).

Claims 9 and 11, which depend from Claim 7, are allowable over Kim for the reasons described above in connection with Claim 7. AAPA fails to remedy the above-described deficiencies of Kim. For these reasons, Claim 9 and 11 are allowable over Kim in view of AAPA.

Claims 14 and 16 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Nachumovsky (U.S. Patent No. 6,174,758).

Claims 14 and 16, which depend from Claim 7, are allowable over Kim for the reasons described above in connection with Claim 7. Nachumovsky fails to remedy the above-described deficiencies of Kim. For these reasons, Claim 14 and 16 are allowable over Kim in view of Nachumovsky.

The Examiner has objected to Claims 17-20 as being dependent upon a rejected base claim. The Examiner has indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Because the Applicants believe that the rejected base claim 7 is allowable for reasons provided above, the Applicants are not amending pending Claims 17, 19 and 20 at this time.

Applicants have added new Claim 22, which is supported in the specification as originally filed in Figs. 11G-11I. No new matter is added.

CONCLUSION

Claims 7-17 and 19-22 are pending in the present application. Reconsideration and allowance of these claims is requested. If the Examiner has any questions, he is invited to contact the undersigned at (925) 895-3545.

Respectfully submitted,



E. Eric Hoffman,
Reg. No. 38,186
Attorney for Applicants

Customer No.: 022888
Tel. No.: (925) 895-3545
Fax No.: (925) 371-8187

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11-4-05 Carrie Reddick
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